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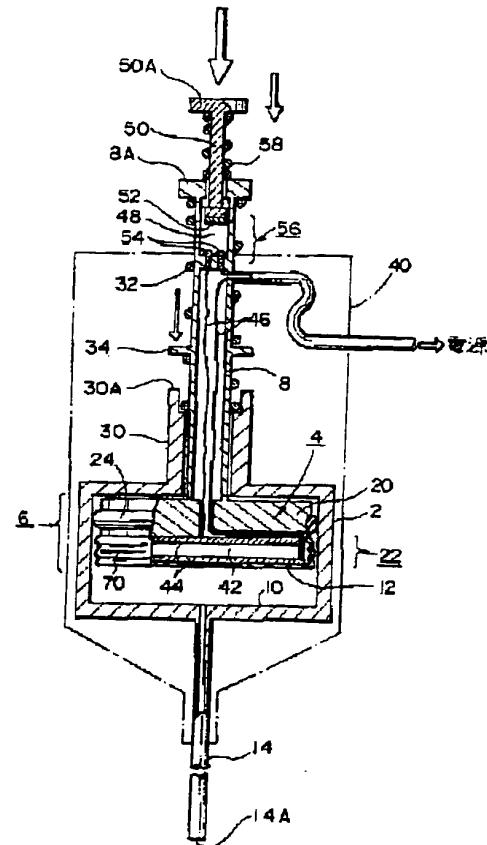
APPLICATION DATE : 11-06-96
 APPLICATION NUMBER : 08149379

APPLICANT : ALOKA CO LTD;

INVENTOR : KAMIO HIROSHI;

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TITLE : PIPETTE DEVICE



ABSTRACT : PROBLEM TO BE SOLVED: To provide a pipette device capable of vigorously discharging liquid at the time of starting discharging the liquid by overcoming liquid resistance and accurately controlling discharging force at the time of finishing discharge of the liquid.

SOLUTION: A piezoelectric element 22 is disposed in a piston 4 capable of moving in a cylinder 2. When voltage is applied to the piezoelectric element 22, the piezoelectric element 22 extends in directions in which the piston advances and retracts. In a first stage of discharge an acting force to a switch lever 50 is transmitted to a piston shaft 8 through a coil spring 58, and the piston 4 moves forward in the cylinder so that a high discharging force corresponding to a considerably large stroke is obtained. In a second stage of discharge of the piston 4 is blocked and the switch lever 50 presses the coil spring 58 to be inserted into the piston shaft 8, and a switch 56 is turned on to apply voltage to the piezoelectric element 22, which then extends to make a head face 12 advance. By using an accurate and fine extension of the piezoelectric element 22, quantity of discharge is accurately and finely controlled.

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